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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,637	09/09/2003	Keng L. Wong	42P14297C	5221

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EXAMINER

LUU, AN T

ART UNIT	PAPER NUMBER
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2816

DATE MAILED: 04/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicant(s)

10/659,637

Applicant(s)

WONG ET AL.

Examiner

An T. Luu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-59 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-59 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9-9-03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1, 5, 6, 9, 15, 24, 29, 34, 36, 49, 54 and 59 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 5, 6, 9, 15, 24, 29, 34, 36, 49, 54 and 59 of copending Application No. 10/136,321 (hereinafter "321"). Although the conflicting claims are not identical, they are not patentably distinct from each other because their scopes are the essentially same.

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Claims 1-59 of the instant application are identical to originally filed claims 1-59 of “321” wherein the current pending claims of “321” (i.e., claims 5, 6, 9, 15, 24, 29, 34, 36, 49, 54 and 59) are wording slightly different from the original forms to overcome rejections under 35 USC 112, 102 and 103. Therefore, the recitations of claims 1, 5, 6, 9, 15, 24, 29, 34, 36, 49, 54 and 59 of the instant application and the current pending claims 5, 6, 9, 15, 24, 29, 34, 36, 49, 54 and 59 of “321” are no longer identical, but their scopes are not different from each other. The scopes of claims of the instant application are broader than those of “321”. Thus, they are anticipated by claims of “321”

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 4, 20 and 22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As to claim 4, the specification discloses in page 21 mode wherein Vcc at max level allowed by sensed temperature on the microprocessor and Vcc may reduce to a min level as long

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as a minimum target frequency is met to conserved power. However, the specification does not provide device(s) and/or method to carry out the limitation recited on claim.

Claims 20 and 22 have similar problem as that of claim 4.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 7, 8, 10-14, 16, 37-47, 50-52 and 55-57 are rejected under 35 U.S.C. 102(b) as being anticipated by the Bosshart reference (U.S. Patent 6,078,634).

Bosshart discloses in figure 8 an apparatus comprising a first circuit VCO to operate at a frequency that is dependent on a power supply voltage CTRL; and a frequency control circuit (11, 12) coupled to a voltage regulator (13 and OPAMP) to supply the power supply voltage to the first circuit and to control the frequency of the first circuit as required by claim 1.

As to claim 2, VCO is shown as a ring oscillator. Therefore, it is inherent that the frequency output is controlled by variation of output of the voltage regulator (i.e., increase or decrease of CTRL).

As to claim 3, divider ($\div 2$) is seen as a part of the frequency control circuit to sense the frequency of the first circuit.

As to claim 7, col. 2, lines 41-52, discloses the claimed invention.

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As to claim 8, Bosshart discloses a VCO circuit comprising two ring oscillators (i.e., 3 and 5 stages) to drive a distribution network as shown in figure 9.

As to claims 10 and 11, microprocessor logic device of figure 8 issues a code representing a desired voltage (i.e., zero volt by turning OFF the PLL). It is noted that PLL enable signal also provides to control CTRL by controlling elements 11, 12, 13 and OPAMP.

As to claim 12, phase detector 11 receives a first clock signal (INPUT CLOCK) and a second clock signal (feedback from VCO) to output UP DOWN signals indicative of a desired power supply voltage level based on the first and second clock signals.

As to claim 13, phase detector is shown to be provided within a core of an IC.

As to claim 14, INPUT CLOCK signal is shown to be produced externally from the core.

As to claim 16, phase detector 11 is capable of operating at two speed targets (i.e., half cycle and full cycle late, col. 6, lines 1-25).

As to claim 37-46, they are rejected for being recited method/steps derived from apparatus of claims 1-3, 7-8, 10-14 and 16 which are rejected as noted above.

As to claim 47, the scope of claim is similar to that of claim 1. Therefore, it is rejected for the same reason set forth above.

As to claims 50-51, the scopes of these claims are similar to those of claims 12-14. Thus, they are rejected for the same reasons set forth above.

As to claims 52 and 55-56, the scopes of these claims are similar to that of claims 47 and 50-51, respectively. Therefore, they are rejected for the same reasons set forth above.

As to claim 57, the scope of claim is similar to that of claims 1 and 12. Therefore, it is rejected for the same reasons set forth above.

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7. Claims 1, 5-7, 9, 15, 17-19, 21, 23-26, 29, 47-49, 52-54 and 57-59 are rejected under 35 U.S.C. 102(b) as being anticipated by the Mahalingaiah et al reference (U.S. Patent 5,490,059).

Mahalingaiah discloses in figure 1 an apparatus comprising a first circuit 110 to operate at a frequency that is dependent on a power supply (output of 134, see col. 3, line 67); and frequency control circuit 102 coupled to a voltage generator 134 to supply power to the first circuit, and control the frequency of the first circuit (col. 2, lines 20-27) wherein the frequency control circuit includes a second circuit 130 to sense a temperature about the first circuit as required by claims 1 and 5. Note that temperature of the first circuit is the same as that of frequency control circuit since both of them are fabricated on the same semiconductor die (col. 2, lines 15-20).

As to claim 6, col. 8, lines 25-28, teaches the frequency control circuit directing the voltage regulator to increase the power supply to a maximum voltage allowed by a present temperature sensed by the second circuit.

As to claim 7, figure shows frequency synthesizer outputting a clock signal.

As to claim 9, the scope of claim is similar to that of claim 5. Therefore, it is rejected for the same reason set forth above. Note that limitation “wherein the apparatus further comprises an element that is powered by the power supply voltage and that is driven by the clock signal” is seen as “intended use” since the existence, or lack of, “an element” does not change the operational characteristics of the claimed invention.

As to claim 15, Mahalingaiah discloses in figure 1 an apparatus comprising a first circuit 110 to operate at a frequency that is dependent on a power supply (output of 134, see col. 3, line 67); and frequency control circuit 102 coupled to a voltage generator 134 to supply power to the

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first circuit, and control the frequency of the first circuit (col. 2, lines 20-27); and a software selectable switch (col. 1 line 67 to col. 2, line 3) to select between at least a frequency maximizing mode and a power minimizing mode.

As to claim 17, the scope of claim is similar to that of claim 1. Thus, it is rejected for the same reason set forth above. It is noted that bus 108 is seen as clock distribution network.

As to claim 18, the scope of claim is similar to that of claim 2. Thus, it is rejected for the same reason set forth above.

As to claim 19, the scope of claim is similar to that of claim 5. Therefore, it is rejected for the same reason set forth above. It is noted that the frequency of the at least one circuit element depends upon temperature.

As to claim 21, the scope of claim is similar to that of claim 5. Therefore, it is rejected for the same reason set forth above. Note that system bus 108 is seen as clock distribution network.

As to claim 23, figure shows frequency synthesizer outputting a clock signal.

As to claim 24, the scope of claim is similar to that of claim 9. Therefore, it is rejected for the same reason set forth above. Note that system bus 108 is seen as clock distribution network.

As to claims 25 and 26, figure 1 shows control unit 134 issuing a code (two-bit line) representing a desire voltage.

As to claim 29, the scope of claim is similar to that of claim 15. Therefore, it is rejected for the same reason set forth above. Note that system bus 108 is seen as clock distribution network.

As to claims 47-49, the scopes of these claims are similar to that of claim 24. Thus, they are rejected for the same reason set forth above.

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As to claims 52-54 and 57-59 the scopes of claims are similar to that of claims 17 and 24.

Therefore, they are rejected for the same reason set forth above.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 17-19, 23, 25-28, 30, 48, 53 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Bosshart reference (U.S. Patent 6,078,634) in view of the Bhagwan (U.S. Patent 5,912,574).

Bosshart discloses all the claimed invention (i.e., PLL circuit) of claim 17 (see above section) except for teaching his PLL output signal is provided for a clock distribution network as particularly required by claim. It is known that a clock signal is for driving a variety of devices, including but not limited to a clock distribution network. Bhagwan discloses in figure 12 a PLL circuit providing a clock signal to a clock distribution network as required by claim. It would have been obvious to one skilled in the art to incorporate the teaching of Bhagwan into that of Bosshart since any PLL circuit can be used to drive a clock distribution network and a PLL circuit can be implemented in many different ways as known in the art.

As to claims 18, 19, 23, 25-28 and 30, the scopes of these claims are similar to that of claims 2, 3, 7-8, 10-14 and 16. Therefore, they are rejected for the same reason set forth above.

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As to claim 48, it is obvious that there exists an element coupled to a clock distribution network since the clock distribution network is a means for distributing clock signal to element along a processing line.

As to claims 53 and 58, the scopes of these claims are similar to that of claim 48. Therefore, it is rejected for the same reason set forth above.

10. Claims 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Bosshart reference (U.S. Patent 6,078,634).

The scope of claim 31 is similar to that of claim 1 barring location of components with respect to each other. Therefore, Bosshart discloses all the claimed invention except for teaching physical location of components in his circuitry. It would have been obvious to one skilled in the art at the time invention was made to arrange components as required by claim since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

As to claims 32-33 and 35, the scopes of these claims are similar to that of claims 2-3 and 7. Therefore, they are rejected for the same reasons set forth above.

As to claim 34, the scope of claim is similar to that of claim 5. Therefore, it is rejected for the same reason set forth above.

As to claim 36, the scope of claim is similar to that of claim 9. Therefore, it is rejected for the same reason set forth above.

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Conclusion

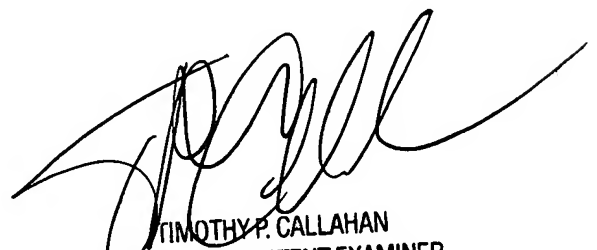
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to An T. Luu whose telephone number is 571-272-1746. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

An T. Luu
4-15-04 *ATL*


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